

**SYSTEMS INCLUDING HEATED SHOWER HEADS FOR  
THIN FILM DEPOSITION AND RELATED METHODS**

**Abstract**

5           A deposition apparatus is disclosed for depositing a layer on a substrate  
such as a semiconductor wafer. The deposition apparatus may include a  
process chamber, and a susceptor in the process chamber with the susceptor  
being configured to receive a substrate for depositing a thin layer thereon. The  
deposition apparatus may also include a showerhead on a side of the process  
10 chamber with the showerhead being configured to receive reaction gases and to  
introduce the reaction gases into the process chamber. The showerhead may  
include a heating element therein for heating reaction gases prior to introducing  
the reaction gases into the reaction chamber. Related methods are also  
discussed.

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